

REMARKS

SECTION 112 REJECTIONS

Claims 31-34 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In claim 31, it was asserted that “determining a mixture of probability distributions” was not clear as to what a mixture of probability distributions is. Support for this language is found on page 18, lines 1-16 where a mixture of two Gaussians, well known probability distributions, is described. Further, a mixture of probability distributions is a well-known term in the art. It is often referred to more specifically as a “mixture of Gaussians.” As such, those skilled in the art would interpret the phrase “determining a mixture of probability distributions” as being clear, especially given the disclosure on page 18 of the Specification.

Claims 32-34 were also rejected as depending from claim 30 instead of claim 31. With the present amendment, the limitations of claim 31 have been added to claim 27 and claims 32-34 have been amended to depend from claim 27.

SECTION 102 REJECTIONS

CLAIMS 1-15

Claims 1-4, 8-9, 14, and 15 were rejected under 35 U.S.C. §102(e) as being anticipated by Rui et al. (U.S. Patent No. 2003/0103647, hereinafter Rui).

Independent claim 1 provides a method that includes receiving at least two frames of image data and learning a model for the appearance of an object from the at least two frames of image data. A changing position of the object in three dimensions is tracked from the at least two frames of image data.

Rui does not show or suggest the invention of claim 1 because it does not show or suggest tracking a changing position of an object in three dimensions. In the Office Action, paragraph 162 of Rui was cited as showing this limitation. Applicants respectfully dispute this assertion.

Paragraph 162 of Rui discusses a modification to a multi-cue tracking process. Under this modification, instead of using a previous location for the outline of a face, the position of a face is determined by locating feature points in an image. These feature points include things such as eye corners, mouth corners, nostrils, etc. Paragraph 162 makes no mention of tracking a changing position of an object in three dimensions.

In addition, throughout Rui, the position of an object that is tracked is the outline of a face in a two-dimensional image. Thus, Rui is simply determining what pixels in the image contain an image of a face. It does not actually track the position of the object in three dimensions. Note that tracking an object in three dimensions is substantially more complicated than tracking the location of a face image in a bigger image. As such, claim 1 and claims 2-15 which depend therefrom are patentable over Rui.

#### CLAIMS 16-26

Claims 16-18 and 23-26 were rejected under 35 U.S.C. §102(e) as being anticipated by Rui. Claims 19-22 were objected to as being dependent upon a rejected base claim but were indicated as being allowable if rewritten in independent form.

With the present amendment, the limitations of claims 18 and 19 have been added to claim 16. As amended, claim 16 now represents claim 19 rewritten in independent form. With the indication of the allowability of claim 19 if rewritten in independent form, claim 16 as amended is now in from for allowance as are claims 17 and 20-26 which depend therefrom.

#### CLAIMS 27-34

Claims 27-30 were rejected under 35 U.S.C. §102(e) as being anticipated by Rui. Claims 31-34 were indicated as being allowable if rewritten to overcome the §112 rejections and to include all of the limitations of the base claim and any intervening claims. With the present amendment, the limitations of claims 28, 30, and 31 have been added to claim 27. As amended, claim 27 represents claim 31 rewritten in independent form. With the indication that such a claim

would be allowable, claim 27 and claims 29 and 32-34 which depend therefrom are now in form for allowance.

CONCLUSION

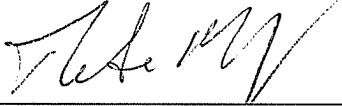
Based on the above remarks, claims 1-17, 20-27, 29, and 32-34 are in form for allowance. Reconsideration and allowance of the claims is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By:

  
Theodore M. Magee, Reg. No. 39,758  
900 Second Avenue South, Suite 1400  
Minneapolis, Minnesota 55402-3319  
Phone: (612) 334-3222 Fax: (612) 334-3312

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